FAQ's

1. **What are the different types of Central Plant systems?**

   The different types of Central Plant systems are, Direct expansion system, Chilled water system and Variable refrigerant flow system.

2. **Describe about the types of chillers and their applications.**

   Depending on the type of compressor used these chillers can be classified as reciprocating chiller, screw chiller, centrifugal chiller and absorption chillers. The typical application of each of these chillers is 40-300 TR, greater than 300 TR, greater than 500 TR and greater than 500 TR respectively.

3. **Explain the working principle of Water & Air cooled condensers.**

   In the air cooled system, the heat from the conditioned area is transferred to the cold refrigerant warming it up. This warm refrigerant then sheds the heat to the air outside in the air cooled condenser. In the water cooled system, the heat from the conditioned are is transferred to the cold refrigerant warming it up. This warm refrigerant transfers the heat to water in the water cooled condenser thereby warming the water. This warm water in turn transfers the heat to the atmosphere through the cooling tower.

4. **How does VAV system differ from regular Central AC system?**

   A variable-air-volume (VAV) system is a single path system that controls zone temperature by modulating airflow while maintaining constant supply air temperature. VAV terminal units, located at each zone, adjust the quantity of air reaching each zone depending on its load requirements. Reheat coils may be included to provide required heating for perimeter zones. VAV boxes provide constant or variable airflow depending on the temperature demands of the space. As the temperature raises the VAV, damper opens to send a designed amount of airflow to the space or room.

5. **Explain the parameters for Duct sizing and the importance of aspect ratio.**

   Practical ducts can either be rectangular in section or circular. Rectangular duct are more common. We opt of Circular duct when the same is to be an exposed duct, with out being covered by side boxing or false ceiling. There is an Indian Standard for the fabrication of ducts – IS 655 specifies gauge of sheet metal required, flange specification, bracing angle specification for various sizes of ducts.

   Factor called aspect ratio is to be understood – the ratio between larger side and smaller side – a good duct should not have an aspect ratio of not more than 4.